



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Lawrence G. Clawson, Mark R. Hagan, Chunming Frank Qi  
and William F. Northrop

Serial No.: 10/012,195 Group Art Unit: 1745

Filed: December 5, 2001 Examiner: Not Assigned Yet

Confirmation No.: 5684

For: HEAT TRANSFER OPTIMIZATION IN MULTI SHELLLED REFORMERS

CERTIFICATE OF MAILING	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450	
on	03-10-04 Donna Bartolone
Date	Signature
Donna Bartolone	
Typed or printed name of person signing certificate	

REVOCATION OF POWERS OF ATTORNEY  
AND APPOINTMENT OF NEW ATTORNEYS AND/OR AGENTS

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Nuvera Fuel Cells, Inc., a Corporation duly organized under the laws of the Delaware, is the assignee of the entire right, title and interest in the above-identified application. Nuvera Fuel Cells, Inc. hereby appoints the attorneys and/or agents associated with:

**Customer No. 21005**

Hamilton, Brook, Smith & Reynolds, P.C.

530 Virginia Road

P.O. Box 9133

Concord, Massachusetts 01742-9133

to prosecute the above-identified application and any divisions or continuations thereof and to conduct all business in the United States Patent and Trademark Office. All previously granted Powers of Attorney are hereby revoked.

Statement under 37 C.F.R. §3.73(b) is submitted herewith.

All correspondence should be sent to Customer No. 21005, Hamilton, Brook, Smith & Reynolds, P.C., 530 Virginia Road, P.O. Box 9133, Concord, Massachusetts 01742-9133. Please direct all telephone calls to James M. Smith at (978) 341-0036, and all facsimile communications to (978) 341-0136.

Respectfully submitted,

Nuvera Fuel Cells, Inc.

By James C. Cross  
James C. Cross J.C.

Title Vice President

Date 5 March 2004



Docket No. 3402.1007-000 (Formerly 3402.1000-004)

STATEMENT UNDER 37 C.F.R. § 3.73(b)

Applicants: Lawrence G. Clawson, Mark R. Hagan, Chunming Frank Qi, and William F. Northrop

Application No.: 10/012,195

Filed: December 5, 2001

For: Heat Transfer Optimization In Multi Shelled Reformers

Nuvera Fuel Cells, Inc.

(Name of Assignee)

, a corporation

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is

- A. ☒ the assignee of the entire right, title and interest in the patent application identified above; or
- B. ☐ an assignee together with [ ] of the entire right, title and interest in the patent application identified above. A separate Statement under 37 CFR § 3.73(b) is being submitted.

The right, title and interest of the above-named assignee in the patent application identified above is established by virtue of:

- A. ☒ An assignment from the inventor(s) of the patent application identified above. The assignment was recorded in the Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or a copy thereof is attached.

OR

- B. ☐ A chain of title from the inventor(s) of the patent application identified above, to the current assignee as shown below:

1. From: \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the Patent and Trademark Office at  
Reel \_\_\_\_\_, Frame \_\_\_\_\_, or a copy thereof is attached.
2. From: \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the Patent and Trademark Office at  
Reel \_\_\_\_\_, Frame \_\_\_\_\_, or a copy thereof is attached.
3. From: \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the Patent and Trademark Office at  
Reel \_\_\_\_\_, Frame \_\_\_\_\_, or a copy thereof is attached.

- ☐ Additional documents in the chain of title are listed on a supplemental sheet.

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Date: 5 March 2004

Name: James C. Cross <sup>T.O.</sup>

Title: Vice President

Signature: James C. Cross

ASSIGNMENT**COPY** <sup>Joint</sup>

WHEREAS, we, **Lawrence G. Clawson, Mark R. Hagan, Chunming Frank Qi, and William F. Northrop**, have invented a certain improvement in **Heat Transfer Optimization In Multishell Reformer** described in an application for Letters Patent of the United States, the specification of which:

- ☐ is being executed on even date herewith and is about to be filed in the United States Patent Office;
- ☒ was filed on **December 5, 2001** as Application No. **10/012,195**;
- ☐ was patented under U.S. Patent No. ☐ on ☐.

WHEREAS, **Nuvera Fuel Cells, Inc.** (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the **State of Delaware**, and having a usual place of business at **35 Acorn Park, Cambridge, Massachusetts 02140-2390** desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

Inventor's Signature:

Lawrence G. Clawson

Lawrence G. Clawson

State/Commonwealth

of Massachusetts

County of Middlesex

Then personally appeared before me the above-named **Lawrence G. Clawson** and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this

19<sup>th</sup> day of June, 2002.

(SEAL)

Francis H. Karpavich

Notary Public

Francis H. Karpavich (print name)

My Commission expires 8 / 16 / 2008

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Inventor's Signature: \_\_\_\_\_

**Mark R. Hagan**

State/Commonwealth

of \_\_\_\_\_

County of \_\_\_\_\_

Then personally appeared before me the above-named **Mark R. Hagan** and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

(SEAL)

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
(print name)

My Commission expires \_\_\_\_/\_\_\_\_/\_\_\_\_

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Inventor's Signature: \_\_\_\_\_

**Chunming Frank Qi**

State/Commonwealth

of \_\_\_\_\_

County of \_\_\_\_\_

Then personally appeared before me the above-named **Chunming Frank Qi** and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

(SEAL)

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
(print name)

My Commission expires \_\_\_\_/\_\_\_\_/\_\_\_\_

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Inventor's Signature: \_\_\_\_\_

William F. Northrop

State/Commonwealth

of Massachusetts

County of Middlesex

Then personally appeared before me the above-named **William F. Northrop** and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this

19<sup>th</sup> day of June 2004.

(SEAL)

Francis D. Kivipada Notary Public

Francis D. Kivipada (print name)

My Commission expires 8 / 16 / 2008

JointASSIGNMENT

WHEREAS, we, **Lawrence G. Clawson, Mark R. Hagan, Chunming Frank Qi, and William F. Northrop**, have invented a certain improvement in **Heat Transfer Optimization In Multishell Reformer** described in an application for Letters Patent of the United States, the specification of which:

- ☐ is being executed on even date herewith and is about to be filed in the United States Patent Office;
- ☒ was filed on **December 5, 2001** as Application No. **10/012,195**;
- ☐ was patented under U.S. Patent No. ☐ on ☐.

WHEREAS, **Nuvera Fuel Cells, Inc.** (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the **State of Delaware**, and having a usual place of business at **35 Acorn Park, Cambridge, Massachusetts 02140-2390** desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;



AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

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Inventor's Signature: \_\_\_\_\_  
**Lawrence G. Clawson**

State/Commonwealth

of \_\_\_\_\_

County of \_\_\_\_\_

Then personally appeared before me the above-named **Lawrence G. Clawson** and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

(SEAL) \_\_\_\_\_ Notary Public

\_\_\_\_\_  
(print name)

My Commission expires \_\_\_\_/\_\_\_\_/\_\_\_\_

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Inventor's Signature: \_\_\_\_\_

M Hagan

9/23/02

**Mark R. Hagan**

State/Commonwealth

of MASSACHUSETTS

County of MIDDLESEX

Then personally appeared before me the above-named **Mark R. Hagan** and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this 23<sup>RD</sup> day of September, 2002.

(SEAL)

Donald L. Groat  
DONALD L. GROAT

Notary Public

(print name)

My Commission expires 05/15/2009

Inventor's Signature: \_\_\_\_\_

**Chunming Frank Qi**

State/Commonwealth

of \_\_\_\_\_

County of \_\_\_\_\_

Then personally appeared before me the above-named **Chunming Frank Qi** and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

(SEAL)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Notary Public

(print name)

My Commission expires \_\_\_\_/\_\_\_\_/\_\_\_\_

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Inventor's Signature: \_\_\_\_\_  
**William F. Northrop**

State/Commonwealth  
of \_\_\_\_\_  
County of \_\_\_\_\_

Then personally appeared before me the above-named **William F. Northrop** and  
acknowledged that he/she executed the foregoing instrument as his/her free act and deed this  
\_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

(SEAL) \_\_\_\_\_ Notary Public  
\_\_\_\_\_  
(print name)  
My Commission expires \_\_\_\_/\_\_\_\_/\_\_\_\_

JointASSIGNMENT

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NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

Inventor's Signature: \_\_\_\_\_

Lawrence G. Clawson

**Lawrence G. Clawson**

State/Commonwealth

of Massachusetts

County of Middlesex

Then personally appeared before me the above-named **Lawrence G. Clawson** and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this

19<sup>th</sup> day of June, 2002.

(SEAL)

Francis H. Karpavich

Notary Public

Francis H. Karpavich (print name)

My Commission expires 8 / 16 / 2008

Inventor's Signature: \_\_\_\_\_  
Mark R. Hagan

State/Commonwealth  
of \_\_\_\_\_  
County of \_\_\_\_\_

Then personally appeared before me the above-named **Mark R. Hagan** and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

(SEAL) \_\_\_\_\_ Notary Public  
\_\_\_\_\_  
(print name)  
My Commission expires \_\_\_\_/\_\_\_\_/\_\_\_\_

Inventor's Signature: \_\_\_\_\_  
Chunming Frank Qi

State/Commonwealth  
of Massachusetts  
County of Middlesex

Then personally appeared before me the above-named **Chunming Frank Qi** and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this 25<sup>th</sup> day of June, 2002.

(SEAL) \_\_\_\_\_ Notary Public  
\_\_\_\_\_  
(print name)  
DAVID R. HANDY  
Notary Public, Massachusetts  
My Commission Expires June 20, 2008

Inventor's Signature: \_\_\_\_\_

William F. Northrop

State/Commonwealth

of Massachusetts

County of Middlesex

Then personally appeared before me the above-named **William F. Northrop** and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this

19<sup>th</sup> day of June 2004.

(SEAL)

Francis D. Kivley, Jr. Notary Public

Francis D. Kivley, Jr. (print name)

My Commission expires 8 / 16 / 2008